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**CLAIMS**

1. Mashing process, wherein mash is filtered and wort is obtained, characterized in that the mash is fed to the filter material of a dynamic cross-flow filtration system, wort is withdrawn from the side-stream side of the filter material and thickened remainder is withdrawn from the feed side of the filter material.
- 15 2. Process according to claim 1 characterized by one or more of the following features:
  - a. a dynamic cross-flow filtration system with rotating disks or concentrically rotating cylinders or with oscillating disks is used as a dynamic cross-flow filtration system;
  - 20 b. a material selected from:
    - polymer membranes, especially polyamide membranes, PTFE membranes, PVDF membranes, preferably selected from membranes with a retention rate (measured after Pall, Colloid and Surface Science Symposium, Tennessee (1978)) of below 2  $\mu\text{m}$ , more preferably of 1  $\mu\text{m}$  to 0.04  $\mu\text{m}$ , most preferably about 0.1  $\mu\text{m}$ ;
    - steel;
    - nickel; or
    - ceramic;
- 25 30

or a combination of two or more of such materials  
is used as a filter material;

- c. a closed, pressurized dynamic cross-flow filtration system is used  
as a dynamic cross-flow filtration system .

3. Process according to claim 1

characterized by one or more of the following features:

- a. the mash used has a reduced husk content, preferably a husk  
content of 40 to 95% by weight, more preferably a husk content  
of 50 to 80% by weight, in terms of the husk content in the  
starting mash as 100% by weight

- b. the mash used has starch particles of a grain size of below 100  
 $\mu\text{m}$ , preferably with a particle size distribution, wherein 99% of  
the particles have a grain size of below 100  $\mu\text{m}$ , 70% of the  
starch particles have a grain size of below 65  $\mu\text{m}$ , with a signif-  
icant portion of the starch particles preferably having a bimodal  
particle size distribution (determined with a laser diffraction spec-  
trometer; Helosystem, Sympatec) with distinct maxima at about 5  
 $\mu\text{m}$  and about 25  $\mu\text{m}$ ;

- c. the mash used is derived from finely ground powder grist;

- d. the mash includes modified malts;

- e. the mash comprises a mixture of at least two malt flours of  
different specification.

## 4. Process according to claim 1

characterized by one or more of the following features:

- a. the operational flow rates, pressures and temperatures are such that a wort flow of 90 to 250, preferably 130 to 200 l/hm<sup>2</sup> is obtained;
- b. the portion of spent grain of the mash is edulcorated acceleratedly by the mash flow dynamic;
- c. when operating, at least two dynamic cross-flow filtration systems (steps) are used in serial order, wherein preferably the first wort is obtained from the first dynamic cross-flow filtration system, while from the second step and possibly from further steps second wort and spent grain are obtained;
- d. filtration is such that the wort obtained is essentially free of particles which are larger than 0.1 µm;
- e. no recycling of the initial feed is applied when operating.

5. Process for the preparation of beer, wherein a mash is filtered, the wort obtained is fermented with yeast and the produced beer is recovered, characterized in that the mash is filtered by means of a dynamic cross-flow filtration system.

6. Process for the preparation of beer according to claim 5, characterized in that a mash is used, which at least partially includes at least one flour having one of the two following particle size distributions A or B:

A. Partially de-husked, pulverized      B: "Reiter"-grist  
bimodal

100% < 125 $\mu\text{m}$	99% < 600 $\mu\text{m}$
80% < 60 $\mu\text{m}$	80% < 200 $\mu\text{m}$
60% < 35 $\mu\text{m}$	75% < 150 $\mu\text{m}$
40% < 25 $\mu\text{m}$	60% < 80 $\mu\text{m}$
20% < 10 $\mu\text{m}$	40% < 40 $\mu\text{m}$
	20% < 20 $\mu\text{m}$

- 10 7. Use of dynamic cross-flow filtration systems for the filtration of mash.
- 11 8. Use according to claim 7, characterized in that a dynamic cross-flow filtration system with rotating disks or with concentrically rotating cylinders or with oscillating disks is used.
- 15 9. Use according to claim 7 characterized in that a dynamic cross-flow filtration system is used, wherein the separation material is at least partially a microporous membrane, especially a microporous polyamide membrane, a microporous PTFE membrane or a microporous PVDF membrane, preferably a membrane with a retention rate of below 2  $\mu\text{m}$ , more preferably from 1  $\mu\text{m}$  to 0.04  $\mu\text{m}$ , most preferably of about 0.1  $\mu\text{m}$ .
- 20 10. Use of dynamic cross-flow filtration systems as defined in  
25 claim 1 for the filtration of mash.
11. Device for the execution of a mashing process according to  
claim 1 characterized by:

- a. at least one vessel for the reception of mash, which is supplied with a heating device provided with a thermostat;
  - b. a dynamic filtration device for the reception of mash with an inlet for the mash at the feed side of the filter material and a device for the withdrawal of the wort from the side-stream side of the filter material;
  - c. a device for the transfer of the mash from the vessel to the inlet device of the dynamic filtration device.
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12. Device according to claim 11, characterized in that the filter material is selected from:
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- polymer membranes, especially polyamide membranes, PTFE membranes, PVDF membranes, preferably membranes which have a retention rate (measured according to Pall, Colloid and Surface Science Symposium, Tennessee (1978)) of below 2  $\mu\text{m}$ , more preferably of 1  $\mu\text{m}$  to 0.04  $\mu\text{m}$ , most preferably of about 0.1  $\mu\text{m}$ ;
  - steel;
  - nickel; or
  - ceramic;
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- or a combination of two or more thereof.
- 25
13. Apparatus according to claim 11 , characterized in that the filter material has a retention rate of below 2  $\mu\text{m}$ , more preferably of 1  $\mu\text{m}$  to 0.04  $\mu\text{m}$ , most preferably of about 0.1  $\mu\text{m}$ .

14. Device according to claim 11, characterized in that the dynamic filtration device has at least one rotating disk and two filter plates in a stationary casing.